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EXAMINER

ANYASO, UCHENDU O

ART UNIT PAPER NUMBER

2675

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/382,677

Applicant(s)

HIROKI, MASAOKI

Examiner

Uchendu O Anyaso

Art Unit

2675

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 December 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 2-11, 13 and 16-34 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 2-11, 13 and 16-34 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 11/10/04.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

1. **Claims 2-11, 13 and 16-34** are pending in this action.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. **Claims 5-7 and 17-19** are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

With respect to **claims 5 and 17**, applicant claims how a modulated clock signal may be obtained by randomly shifting the frequency of the standard clock signal. However, the specification does not describe this concept to enable one skilled in the art to make and/or use this concept of randomly shifting the frequency of the standard clock signal.

With respect to **claim 6, 7, 18 and 19**, applicant claims a modulated clock signal that may be obtained by shifting the frequency of the standard clock signal in the form of a triangular wave and sine wave. However, the specification does not describe this concept to enable one skilled in the art to make and/or use this concept of obtaining a modulated clock signal by shifting the frequency of the standard clock signal in the form of a triangular wave and sine wave.

Applicant is advised to clarify these concepts.

Claim Rejections - 35 USC ' 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

5. **Claims 13 and 17** are rejected under 35 U.S.C. 102(e) as being anticipated by *Bassetti et al* (U.S. Patent 6,046,735).

Regarding **Claim 13**, Bassetti teaches a video clock that has a constant frequency wherein a modulated video clock means supplies a frequency-modulated video clock to the flat-panel converter such that the flat-panel converter transfers pixels out the panel-interface output to the flat-panel display at a modulated rate proportional to a current frequency of the frequency-modulated video clock (column 6, lines 19-24).

Furthermore, Bassetti teaches applying a modulated clock signal to a source signal line-side driving circuit of a display device by teaching how a clock modulator 82' generates modulated video clock VCLK_SS by slowly decrementing the frequency while pixels are being written to a first half of a horizontal line, but then slowly incrementing the frequency while pixels are being written to a second half of the horizontal line (column 14, lines 62 through column 15, line 4, figure 13 at 82'). Also, Bassetti further teaches that the modulated video clock VCLK_SS is input to the entire CRT path and the LCD path, including CRT buffer 52, attribute controller 54, RAM look-up table 56, and LCD controller 62 (column 15, lines 5-11).

Furthermore, Bassetti discloses how his device would be used in an active matrix type device by disclosing the use of his within a TFT-type display (column 1, lines 57-59).

Furthermore, Bassetti teaches how to supply the sampled image to a corresponding pixel to obtain an image (column 6, lines 35-37).

Regarding **Claim 17**, in further discussion of claims 13, Bassetti discloses how a modulated clock signal may be obtained by randomly shifting the frequency of the modulated clock (column 5, lines 30-36).

Claim Rejections - 35 USC ' 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. **Claims 2, 5, 8, 10 and 11** are rejected under 35 U.S.C. 103(a) as being unpatentable over *Bassetti et al* (U.S. Patent 6,046,735) in view of *Taguchi* (U.S. Patent 6,115,020).

Regarding **Claim 2**, Bassetti teaches a video clock that has a constant frequency wherein a modulated video clock means supplies a frequency-modulated video clock to the flat-panel converter such that the flat-panel converter transfers pixels out the panel-interface output to the flat-panel display at a modulated rate proportional to a current frequency of the frequency-modulated video clock (column 6, lines 19-24).

Furthermore, Bassetti teaches how to obtain a modulated clock signal by teaching how a clock modulator 82' generates modulated video clock VCLK_SS by slowly decrementing the frequency while pixels are being written to a first half of a horizontal line, but then slowly incrementing the frequency while pixels are being written to a second half of the horizontal line (column 14, lines 62 through column 15, line 4, figure 13 at 82'). Also, Bassetti further teaches that the modulated video clock VCLK_SS is input to the entire CRT path and the LCD path, including CRT buffer 52, attribute controller 54, RAM look-up table 56, and LCD controller 62 (column 15, lines 5-11)..

Furthermore, Bassetti discloses how his device would be used in an active matrix type device by disclosing the use of his within a TFT-type display (column 1, lines 57-59).

Furthermore, Bassetti teaches how to supply the sampled image to a corresponding pixel to obtain an image (column 6, lines 35-37).

Also, Bassetti teaches a digital-to-analog converter (DAC) that is coupled to receive pixels from the pixel output of the pixel-transfer path (column 6, lines 28-30; column 15, lines 46-67, figure 15 at 114).

However, Bassetti does not teach an analog-to-digital converter (A/D) that samples an analog signal. On the other hand, Taguchi teaches an invention that pertains to a display method capable of enlarging an image in the vertical direction at an arbitrary enlargement ration wherein an A/D converter 621 converts an analog image signal onto n-bit digital signals (column 3, lines 51-55; column 25, lines 39-52, figure 45 at 621).

Thus, it would have been obvious to a person of ordinary skill in the art to combine Bassetti and Taguchi inventions because while Bassetti teaches how to frequency modulate a

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video clock signal, Taguchi teaches how to achieve A/D conversion in such a device. The motivation for combining these inventions would have been to efficiently enlarge an image in a display device without causing adverse effects such as flicker noise appearing on the image (column 3, lines 41-55).

Regarding **Claim 5**, in further discussion of claims 2, Bassetti discloses how a modulated clock signal may be obtained by randomly shifting the frequency of the modulated clock (column 5, lines 30-36).

Regarding **Claims 8, 10 and 11**, in further discussion of claim 2, Bassetti discloses how his device would be used in an active matrix type device by disclosing the use of his within a TFT-type display (column 1, lines 57-59). It is well known in the art how such a display would be an active matrix type display device, liquid crystal type display device or an electroluminescence display.

8. **Claims 3, 8, 10 and 11** are rejected under 35 U.S.C. 103(a) as being unpatentable over *Bassetti et al* (U.S. Patent 6,046,735) in view of *Taguchi* (U.S. Patent 6,115,020), and further in view of *Oakley* (U.S. Patent 6,281,873)..

Regarding **Claim 3**, Bassetti teaches a video clock that has a constant frequency wherein a modulated video clock means supplies a frequency-modulated video clock to the flat-panel converter such that the flat-panel converter transfers pixels out the panel-interface output to the

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flat-panel display at a modulated rate proportional to a current frequency of the frequency-modulated video clock (column 6, lines 19-24).

Furthermore, Bassetti teaches how to obtain a modulated clock signal by teaching how a clock modulator 82' generates modulated video clock VCLK_SS by slowly decrementing the frequency while pixels are being written to a first half of a horizontal line, but then slowly incrementing the frequency while pixels are being written to a second half of the horizontal line (column 14, lines 62 through column 15, line 4, figure 13 at 82'). Also, Bassetti further teaches that the modulated video clock VCLK_SS is input to the entire CRT path and the LCD path, including CRT buffer 52, attribute controller 54, RAM look-up table 56, and LCD controller 62 (column 15, lines 5-11).

Furthermore, Bassetti discloses how his device would be used in an active matrix type device by disclosing the use of his within a TFT-type display (column 1, lines 57-59).

Furthermore, Bassetti teaches how to supply the sampled image to a corresponding pixel to obtain an image (column 6, lines 35-37).

Also, Bassetti teaches a digital-to-analog converter (DAC) that is coupled to receive pixels from the pixel output of the pixel-transfer path (column 6, lines 28-30; column 15, lines 46-67, figure 15 at 114).

However, Bassetti does not teach an analog-to-digital converter (A/D) that samples an analog signal. On the other hand, Taguchi teaches an invention that pertains to a display method capable of enlarging an image in the vertical direction at an arbitrary enlargement ration wherein an A/D converter 621 converts an analog image signal onto n-bit digital signals (column 3, lines 51-55; column 25, lines 39-52, figure 45 at 621).

Thus, it would have been obvious to a person of ordinary skill in the art to combine Bassetti and Taguchi inventions because while Bassetti teaches how to frequency modulate a video clock signal, Taguchi teaches how to achieve A/D conversion in such a device. The motivation for combining these inventions would have been to efficiently enlarge an image in a display device without causing adverse effects such as flicker noise appearing on the image (column 3, lines 41-55).

Furthermore, Bassetti and Taguchi do not teach a method wherein the modulated clock is obtained by shifting a frequency of the reference clock signal on the basis of a gaussian histogram. On the other hand, Oakley teaches a video processing technique related to a vertical scaling process and apparatus wherein each frame of the image consists of a collection of horizontal scan lines which are intensity modulated to form an image by decreasing the frequency of the incoming sampling clock or increasing the frequency of the encoder pixel clock (*see* column 3, lines 1-25; *see also* column 1, lines 5-7). Oakley goes on to teach that by changing a gaussian filter coefficients of the kernel, the output can be time shifted by fractions of the clock period (column 4, lines 6-18).

Thus, it would have been obvious to a person of ordinary skill in the art to combine Bassetti, Taguchi and Oakley's inventions because while the combination of Bassetti and Taguchi teach how to frequency modulate a video clock signal, Oakley teaches changing a gaussian filter coefficients of the kernel so that the output can be time shifted by fractions of the clock period (column 4, lines 6-18). The motivation for combining these inventions would have been to scale down or shrink video frames in a horizontal or vertical direction (*see* column 1, lines 64-67).

Regarding **Claims 8, 10, 11**, in further discussion of claim 3, Bassetti discloses how his device would be used in an active matrix type device by disclosing the use of his within a TFT-type display (column 1, lines 57-59). It is well known in the art how such a display would be an active matrix type display device, liquid crystal type display device or an electroluminescence display.

9. **Claim 4** is rejected under 35 U.S.C. 103(a) as being unpatentable over *Bassetti et al* (U.S. Patent 6,046,735) in view of *Taguchi* (U.S. Patent 6,115,020), and further in view of *Oakley* (U.S. Patent 6,281,873).

Regarding **Claim 4**, in further discussion of claim 2, Bassetti and Taguchi do not teach a method wherein the modulated clock is obtained by shifting a frequency of the reference clock signal on the basis of a gaussian histogram. On the other hand, Oakley teaches a video processing technique related to a vertical scaling process and apparatus wherein each frame of the image consists of a collection of horizontal scan lines which are intensity modulated to form an image by decreasing the frequency of the incoming sampling clock or increasing the frequency of the encoder pixel clock (*see* column 3, lines 1-25; *see also* column 1, lines 5-7). *Oakley* goes on to teach that by changing a gaussian filter coefficients of the kernel, the output can be time shifted by fractions of the clock period (column 4, lines 6-18).

Thus, it would have been obvious to a person of ordinary skill in the art to combine Bassetti, Taguchi and Oakley's inventions because while the combination of Bassetti and Taguchi teach how to frequency modulate a video clock signal, Oakley teaches changing a

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gaussian filter coefficients of the kernel so that the output can be time shifted by fractions of the clock period (column 4, lines 6-18). The motivation for combining these inventions would have been to scale down or shrink video frames in a horizontal or vertical direction (*see* column 1, lines 64-67).

10. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over *Bassetti et al* (U.S. Patent 6,046,735) in view of *Taguchi* (U.S. Patent 6,115,020), and further in view of *Martin et al* (U.S. Patent 5,703,621).

Regarding **Claim 9**, in further discussion of claim 2, Bassetti and Taguchi do not teach the display device having passive matrix circuit. On the other hand, Martin teaches techniques for presenting all images types such as video images (column 1, lines 45-49) wherein the display includes a monochrome display (claim 9, column 20, lines 54-56) wherein an image signal would be inputted to a signal electrode of the passive matrix circuit (column 14, lines 1-8, figure 4 at 122, 130, 132, 134). Martin also teaches that his invention is capable of performing any necessary scaling, cropping and segmentation of the input image (column 14, lines 9-19, figure 5 at 140 & 142).

Thus, it would have been obvious to a person of ordinary skill in the art to combine Bassetti, Taguchi and Martin teachings in designing a display device wherein the combination of Bassetti and Taguchi teach how to frequency modulate a video clock signal and Martin teaches a monochrome display device with scaling, cropping and segmentation capabilities. The motivation for combining these inventions would have been to present high quality images in the display device (column 4, lines 66-67 *through* column 5, line 1).

11. **Claim 16** is rejected under 35 U.S.C. 103(a) as being unpatentable over *Bassetti et al* (U.S. Patent 6,046,735) in view of *Oakley* (U.S. Patent 6,281,873).

Regarding **Claim 16**, in further discussion of claim 13, Bassetti does not teach a method wherein the modulated clock is obtained by shifting a frequency of the reference clock signal on the basis of a gaussian histogram. On the other hand, Oakley teaches a video processing technique related to a vertical scaling process and apparatus wherein each frame of the image consists of a collection of horizontal scan lines which are intensity modulated to form an image by decreasing the frequency of the incoming sampling clock or increasing the frequency of the encoder pixel clock (*see* column 3, lines 1-25; *see also* column 1, lines 5-7). *Oakley* goes on to teach that by changing a gaussian filter coefficients of the kernel, the output can be time shifted by fractions of the clock period (column 4, lines 6-18).

Thus, it would have been obvious to a person of ordinary skill in the art to combine Bassetti and Oakley's inventions because while the combination of Bassetti teaches how to frequency modulate a video clock signal, Oakley teaches changing a gaussian filter coefficients of the kernel so that the output can be time shifted by fractions of the clock period (column 4, lines 6-18). The motivation for combining these inventions would have been to scale down or shrink video frames in a horizontal or vertical direction (*see* column 1, lines 64-67).

12. **Claims 6 and 7** are rejected under 35 U.S.C. 103(a) as being unpatentable over *Bassetti et al* (U.S. Patent 6,046,735) in view of *Taguchi* (U.S. Patent 6,115,020), and further in view of *Guttner* (U.S. Patent 4,713,688).

Regarding **Claims 6 and 7**, in further discussion of claim 2, Bassetti and Taguchi do not teach a display device wherein the modulated clock signal is obtained by shifting a frequency of the reference clock signal in the form of a sine wave or triangular wave. On the other hand, Guttner teaches offset rasters that facilitate the offset demodulation process (column 11, lines 6-20; see also column 8, lines 45-58, figure 10) wherein the picture signal spectrum is periodic in the direction of the horizontal spatial frequencies due to the horizontal sampling in the spatial domain (column 5, lines 51-65, figure 3). Figure 3 shows the clock signal in the form of a sine wave.

Thus, it would have been obvious to a person of ordinary skill in the art to combine Bassetti, Taguchi and Guttner inventions because while Bassetti teaches how to frequency modulate a video clock signal, Guttner teaches how the shifting of the clock signal would be represented in the form of a periodic sine wave or triangular wave. The motivation for combining these inventions would have been to transmit an image signal with significantly improved horizontal resolution (*see generally* column 1, lines 11-18).

13. Claims 18 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Bassetti et al* (U.S. Patent 6,046,735) in view of *Guttner* (U.S. Patent 4,713,688).

Regarding **Claims 18 and 19**, in further discussion of claim 13, Bassetti does not teach a display device wherein the modulated clock signal is obtained by shifting a frequency of the reference clock signal in the form of a sine wave or triangular wave. On the other hand, *Guttner* teaches offset rasters that facilitate the offset demodulation process (column 11, lines 6-20; *see also* column 8, lines 45-58, figure 10) wherein the picture signal spectrum is periodic in the

direction of the horizontal spatial frequencies due to the horizontal sampling in the spatial domain (column 5, lines 51-65, figure 3). Figure 3 shows the clock signal in the form of a sine wave.

Thus, it would have been obvious to a person of ordinary skill in the art to combine Bassetti and *Guttner* inventions because while Bassetti teaches how to frequency modulate a video clock signal, *Guttner* teaches how the shifting of the clock signal would be represented in the form of a periodic sine wave or triangular wave. The motivation for combining these inventions would have been to transmit an image signal with significantly improved horizontal resolution (*see generally* column 1, lines 11-18).

14. **Claims 20-29** are rejected under 35 U.S.C. 103(a) as being unpatentable over *Bassetti et al* (U.S. Patent 6,046,735) in view of *Martin et al* (U.S. Patent 5,703,621).

Regarding **Claims 20 and 21**, in further discussion of claim 13, Bassetti teaches a video clock that has a constant frequency wherein a modulated video clock means supplies a frequency-modulated video clock to the flat-panel converter such that the flat-panel converter transfers pixels out the panel-interface output to the flat-panel display at a modulated rate proportional to a current frequency of the frequency-modulated video clock (column 6, lines 19-24).

However, Bassetti does not teach explicitly the display device being an LCD, an electroluminescent display or any other type of display. On the other hand, *Martin* teaches that his invention is capable of performing any necessary scaling, cropping and segmentation of the input image (column 14, lines 9-19, figure 5 at 140 & 142) wherein in *Martin* the display device

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is of the form of an LCD, an electroluminescent display or any other type of display (column 18, lines 62-67).

Thus, it would have been obvious to a person of ordinary skill in the art to combine Bassetti and Martin teachings in designing a display device wherein Bassetti teaches how to frequency modulate a video clock signal and Martin teaches the display device is of the form of an LCD, an electroluminescent display or any other type of display (column 18, lines 62-67) that also possesses scaling, cropping and segmentation capabilities. The motivation for combining these inventions would have been to present high quality images in the display device (column 4, lines 66-67 *through* column 5, line 1).

Regarding **Claims 22-29**, in further discussion of claim 13, it is well known in the art that devices such as a mobile telephone, projector, video camera, mobile computer, head mounted display, personal computer, recorder and a digital camera all comprise a display device. Thus, it would have been obvious to a person skilled in the art to utilize such a display device as described in *Bassetti and Martin* in these equipment.

15. Claims 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Bassetti et al* (U.S. Patent 6,046,735) in view of *Taguchi* (U.S. Patent 6,115,020), and further in view of *Guttner* (U.S. Patent 4,713,688).

Regarding **Claim 30**, Bassetti teaches a video clock that has a constant frequency wherein a modulated video clock means supplies a frequency-modulated video clock to the flat-panel converter such that the flat-panel converter transfers pixels out the panel-interface output

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to the flat-panel display at a modulated rate proportional to a current frequency of the frequency-modulated video clock (column 6, lines 19-24).

Furthermore, Bassetti teaches how to obtain a modulated clock signal by teaching how a clock modulator 82' generates modulated video clock VCLK_SS by slowly decrementing the frequency while pixels are being written to a first half of a horizontal line, but then slowly incrementing the frequency while pixels are being written to a second half of the horizontal line (column 14, lines 62 through column 15, line 4, figure 13 at 82'). Also, Bassetti further teaches that the modulated video clock VCLK_SS is input to the entire CRT path and the LCD path, including CRT buffer 52, attribute controller 54, RAM look-up table 56, and LCD controller 62 (column 15, lines 5-11)..

Furthermore, Bassetti discloses how his device would be used in an active matrix type device by disclosing the use of his within a TFT-type display (column 1, lines 57-59).

Furthermore, Bassetti teaches how to supply the sampled image to a corresponding pixel to obtain an image (column 6, lines 35-37).

Also, Bassetti teaches a digital-to-analog converter (DAC) that is coupled to receive pixels from the pixel output of the pixel-transfer path (column 6, lines 28-30; column 15, lines 46-67, figure 15 at 114).

However, Bassetti does not teach an analog-to-digital converter (A/D) that samples an analog signal. On the other hand, Taguchi teaches an invention that pertains to a display method capable of enlarging an image in the vertical direction at an arbitrary enlargement ration wherein an A/D converter 621 converts an analog image signal onto n-bit digital signals (column 3, lines 51-55; column 25, lines 39-52, figure 45 at 621).

Thus, it would have been obvious to a person of ordinary skill in the art to combine Bassetti and Taguchi inventions because while Bassetti teaches how to frequency modulate a video clock signal, Taguchi teaches how to achieve A/D conversion in such a device. The motivation for combining these inventions would have been to efficiently enlarge an image in a display device without causing adverse effects such as flicker noise appearing on the image (column 3, lines 41-55).

However, Bassetti and Taguchi do not teach a display device wherein the modulated clock signal is obtained by shifting a frequency of the reference clock signal in the form of a sine wave or triangular wave. On the other hand, Guttner teaches offset rasters that facilitate the offset demodulation process (column 11, lines 6-20; see also column 8, lines 45-58, figure 10) wherein the picture signal spectrum is periodic in the direction of the horizontal spatial frequencies due to the horizontal sampling in the spatial domain (column 5, lines 51-65, figure 3). Figure 3 shows the clock signal in the form of a sine wave.

Thus, it would have been obvious to a person of ordinary skill in the art to combine Bassetti, Taguchi and Guttner inventions because while Bassetti teaches how to frequency modulate a video clock signal, Guttner teaches how the shifting of the clock signal would be represented in the form of a periodic sine wave or triangular wave. The motivation for combining these inventions would have been to transmit an image signal with significantly improved horizontal resolution (*see generally* column 1, lines 11-18).

Regarding **Claims 31, 33 and 34**, in further discussion of claim 30, Bassetti discloses how his device would be used in an active matrix type device by disclosing the use of his within

a TFT-type display (column 1, lines 57-59). It is well known in the art how such a display would be an active matrix type display device, liquid crystal type display device or an electroluminescence display.

16. **Claim 32** is rejected under 35 U.S.C. 103(a) as being unpatentable over *Bassetti et al* (U.S. Patent 6,046,735) in view of *Taguchi* (U.S. Patent 6,115,020), and further in view of *Guttner* (U.S. Patent 4,713,688), as in claim 30 above, and further in view of *Martin et al* (U.S. Patent 5,703,621).

Regarding **Claim 32**, in further discussion of claim 30, Bassetti, Taguchi, Guttner do not teach the display device having passive matrix circuit. On the other hand, Martin teaches techniques for presenting all images types such as video images (column 1, lines 45-49) wherein the display includes a monochrome display (claim 9, column 20, lines 54-56) wherein an image signal would be inputted to a signal electrode of the passive matrix circuit (column 14, lines 1-8, figure 4 at 122, 130, 132, 134). Martin also teaches that his invention is capable of performing any necessary scaling, cropping and segmentation of the input image (column 14, lines 9-19, figure 5 at 140 & 142).

Thus, it would have been obvious to a person of ordinary skill in the art to combine Bassetti, Taguchi, Guttner and Martin teachings in designing a display device because while the combination of Bassetti, Taguchi and Guttner teach how to frequency modulate a video clock signal such that the modulated clock signal is obtained by shifting a frequency of the reference clock signal in the form of a sine wave or triangular wave, Martin teaches a monochrome display device with scaling, cropping and segmentation capabilities. The motivation for combining these

inventions would have been to present high quality images in the display device (column 4, lines 66-67 *through* column 5, line 1).

Response to Arguments

17. Applicant's amendment and arguments filed November 10, 2004 via RCE that was filed on December 13, 2004 have been fully considered but they are not persuasive.

Applicant argues the rejections based on 35 U.S.C. 112, first paragraph, for lack of enablement. Specifically, applicant argues that the concept of randomly shifting a frequency of a reference clock signal, or shifting a frequency of a reference clock signal in the form of either a sine wave or a triangular wave are taught in the specification on page 7, paragraph 4-6, and page 15. Examiner has reviewed page 7, paragraph 4-6, and concludes that these aspects of the specification are a mere regurgitation of the claims, and thus, does not describe these concept to enable one skilled in the art to make and/or use this concept of obtaining a modulated clock signal by shifting the frequency of the standard clock signal in the form of a triangular wave and sine wave.

Also, page 15 was reviewed with respect to the concept of randomly shifting a reference clock. However, the specification clearly states that the reference clock operates at a constant frequency, and the modulated clock signal is a clock signal, which shifts in frequency at a certain constant period. This concept as espoused in the specification appears to be teaching away from the concept randomly shifting the reference clock because this same reference clock operates at a constant frequency. As such, the lack of enablement rejection is maintained for claims 5-7 and

17-19. Applicant should please address these issues with specifics in his response by reconciling these conflicting issues that raise 35 U.S.C. 112 issues.

Furthermore, with respect to claim 13, applicant argues that the references cited are silent to the claimed features. Clearly, applicant chooses not to point out how his claimed invention differs from the cited prior art. Reference Bassetti is used to reject claim 13. Specifically, Bassetti teaches a video clock that has a constant frequency wherein a modulated video clock means supplies a frequency-modulated video clock to the flat-panel converter such that the flat-panel converter transfers pixels out the panel-interface output to the flat-panel display at a modulated rate proportional to a current frequency of the frequency-modulated video clock (column 6, lines 19-24). Furthermore, Bassetti teaches applying a modulated clock signal to a source signal line-side driving circuit of a display device by teaching how a clock modulator 82' generates modulated video clock VCLK_SS by slowly decrementing the frequency while pixels are being written to a first half of a horizontal line, but then slowly incrementing the frequency while pixels are being written to a second half of the horizontal line (column 14, lines 62 through column 15, line 4, figure 13 at 82'). Also, Bassetti further teaches that the modulated video clock VCLK_SS is input to the entire CRT path and the LCD path, including CRT buffer 52, attribute controller 54, RAM look-up table 56, and LCD controller 62 (column 15, lines 5-11). Applicant has failed to elaborate how and why he believes these cited sections of Bassetti are silent as to the claimed features of claim 13. Spewing conclusions without providing the basis for such conclusions are very unpersuasive.

With respect to claims 2 and 8-11, applicant argues that Bassetti and Taguchi do not teach performing sampling and A/D conversion on an analog image signal on the basis of a

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modulated clock signal, and performing D/A conversion on a digital image signal on the basis of a modulated clock signal. Examiner disagrees. This is because Bassetti teaches how to obtain a modulated clock signal by teaching how a clock modulator 82' generates modulated video clock VCLK_SS by slowly decrementing the frequency while pixels are being written to a first half of a horizontal line, but then slowly incrementing the frequency while pixels are being written to a second half of the horizontal line (column 14, lines 62 through column 15, line 4, figure 13 at 82'). Also, Bassetti further teaches that the modulated video clock VCLK_SS is input to the entire CRT path and the LCD path, including CRT buffer 52, attribute controller 54, RAM look-up table 56, and LCD controller 62 (column 15, lines 5-11).

Furthermore, Bassetti teaches how to supply the sampled image to a corresponding pixel to obtain an image (column 6, lines 35-37) wherein a digital-to-analog converter (DAC) is coupled to receive pixels from the pixel output of the pixel-transfer path (column 6, lines 28-30; column 15, lines 46-67, figure 15 at 114). Although Bassetti does not teach an analog-to-digital converter (A/D) that samples an analog signal Taguchi teaches an invention that pertains to a display method capable of enlarging an image in the vertical direction at an arbitrary enlargement ration wherein an A/D converter 621 converts an analog image signal onto n-bit digital signals (column 3, lines 51-55; column 25, lines 39-52, figure 45 at 621).

Thus, it would have been obvious to a person of ordinary skill in the art to combine Bassetti and Taguchi inventions because while Bassetti teaches how to frequency modulate a video clock signal, Taguchi teaches how to achieve A/D conversion in such a device. The motivation for combining these inventions would have been to efficiently enlarge an image in a

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display device without causing adverse effects such as flicker noise appearing on the image
(column 3, lines 41-55).

As such, applicant's assertion that contends that Bassetti and Taguchi do not teach performing sampling and A/D conversion on an analog image signal on the basis of a modulated clock signal, and performing D/A conversion on a digital image signal on the basis of a modulated clock signal is not persuasive. Also, applicant's argument that there is no teaching or suggestion in Bassetti or Taguchi regarding the use of a modulated clock for writing into a video memory 50 is unpersuasive. It is noted that the features upon which applicant relies (i.e., the use of a modulated clock for writing into a video memory 50) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

With respect to claims 3 and 4, applicant argues that there is no motivation to combine Bassetti and Oakley. As a result of applicant's amendments, Bassetti, Taguchi and Oakley have been combined to reject applicant's these claimed inventions. The combination of these references do render applicant's claims 3 and 4 unpatentable for the following reasons: first, Bassetti teaches a digital-to-analog converter (DAC) that is coupled to receive pixels from the pixel output of the pixel-transfer path (column 6, lines 28-30; column 15, lines 46-67, figure 15 at 114). Second, Taguchi teaches an invention that pertains to a display method capable of enlarging an image in the vertical direction at an arbitrary enlargement ration wherein an A/D converter 621 converts an analog image signal onto n-bit digital signals (column 3, lines 51-55; column 25, lines 39-52, figure 45 at 621). It would have been obvious to a person of ordinary

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skill in the art to combine Bassetti and Taguchi inventions because while Bassetti teaches how to frequency modulate a video clock signal and Taguchi teaches how to achieve A/D conversion in such a device. The motivation for combining these inventions would have been to efficiently enlarge an image in a display device without causing adverse effects such as flicker noise appearing on the image (column 3, lines 41-55). Third, Oakley teaches a method wherein the modulated clock is obtained by shifting a frequency of the reference clock signal on the basis of a gaussian histogram by teaching a video processing technique related to a vertical scaling process and apparatus wherein each frame of the image consists of a collection of horizontal scan lines which are intensity modulated to form an image by decreasing the frequency of the incoming sampling clock or increasing the frequency of the encoder pixel clock (*see* column 3, lines 1-25; *see also* column 1, lines 5-7) such that by changing a gaussian filter coefficients of the kernel, the output can be time shifted by fractions of the clock period (column 4, lines 6-18). Thus, it would have been obvious to a person of ordinary skill in the art to combine Bassetti, Taguchi and Oakley's inventions because while the combination of Bassetti and Taguchi teach how to frequency modulate a video clock signal, Oakley teaches changing a gaussian filter coefficients of the kernel so that the output can be time shifted by fractions of the clock period (column 4, lines 6-18). The motivation for combining these inventions would have been to scale down or shrink video frames in a horizontal or vertical direction (*see* column 1, lines 64-67).

Should applicant disagree with the rationale provided for combining Bassetti, Taguchi and Oakley, applicant is urged to provide specifics as to why he traverses the combination of these references.

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With respect to claims 16 and 18-29, applicant argues that nothing in Bassetti, Oakley, Guttner or Martin teach or suggest that a modulated clock signal obtained by frequency modulating a reference clock signal is inputted to a source signal line-side driving circuit, while a modulated clock signal which differs from the modulated clock signal in quantity of frequency shifting or method of frequency modulation is inputted to a gate signal line-side driving circuit. Clearly, applicant chooses not to point out how his claimed invention differs from the cited prior art. Reference Bassetti addresses this aspect of applicant's claim.

Specifically, Bassetti teaches a video clock that has a constant frequency wherein a modulated video clock means supplies a frequency-modulated video clock to the flat-panel converter such that the flat-panel converter transfers pixels out the panel-interface output to the flat-panel display at a modulated rate proportional to a current frequency of the frequency-modulated video clock (column 6, lines 19-24). Furthermore, Bassetti teaches applying a modulated clock signal to a source signal line-side driving circuit of a display device by teaching how a clock modulator 82' generates modulated video clock VCLK_SS by slowly decrementing the frequency while pixels are being written to a first half of a horizontal line, but then slowly incrementing the frequency while pixels are being written to a second half of the horizontal line (column 14, lines 62 through column 15, line 4, figure 13 at 82'). Also, Bassetti further teaches that the modulated video clock VCLK_SS is input to the entire CRT path and the LCD path, including CRT buffer 52, attribute controller 54, RAM look-up table 56, and LCD controller 62 (column 15, lines 5-11). Applicant has failed to elaborate how and why he thinks these cited sections of Bassetti fail to address the respective aspects of applicant claimed features.

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Hence, applicant's amendments and arguments are not persuasive.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Uchendu O. Anyaso** whose telephone number is **(703) 306-5934**. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **Michael Razavi**, can be reached at **(703) 305-4713**.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

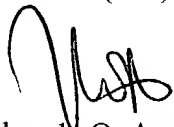
Washington, D.C. 20231

or faxed to:

(703) 872-9314 (for Technology Center 2600 only)

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.



Uchendu O. Anyaso

December 23, 2004

AMR A. AWAD
PRIMARY EXAMINER

